Joshua Wu

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Education

Georgia Institute of Technology | Atlanta, GA, USA Dec 2025

Bachelor of Science in Mechanical Engineering, GPA 3.94/4.00 *Masters Beginning Fall 2026*

- Concentration in **Automation and Robotics,** Minor in **Computer Science** (Computing and Intelligence), Minor in Japanese
  - *Relevant Coursework:* **Robotics, Mechatronics, Robotics and Perception, Machine Learning, Circuits and Electronics, Control of Dynamic Systems,** Artificial Intelligence, Motion Systems, Experimental methods, Mechanical Vibrations, Data Structures and Algorithms, Computer Organization and Programming, Statistics

Tokyo Institute of Technology | Tokyo, Japan Dec 2025

ACAP Study Abroad program for Mechanical Engineering

Skills

Technical: GD&T, FEA, CAD, Prototyping, Machining skills, Electrical and Mechanical System Testing, and Data Analysis **Tools and Equipment:** 3-D printing, Oscilloscope, Function Generator, Multimeter, and Soldering Iron
Programming: Python, C/C++, MATLAB, Java, LaTeX, ROS, Simulink, LabVIEW, Docker, NumPy
Software: SolidWorks, Arduino, STM32CubeIDE, VS Code, Autodesk Inventor, Onshape, GitHub, Excel, and Autodesk Eagle
Languages: English (native), Chinese-Mandarin (fluent), Japanese (Intermediate)

Experience

BAR Lab, Atlanta, Georgia May 2025- Aug 2025

Research Assistant

- Developed Robot End-Effectors to attach to ATI Quick Changers using Solidworks CAD.
- Conducted literature reviews on over 30 different research papers on Non-Destructive Testing Systems.

Southern Spars, Auckland, New Zealand Jan 2024 – March 2024

Composite Spar Maker

- Managed and distributed carbon fiber stock across departments increasing productivity in a factory environment.
- Proofread engineering drawings, successfully preventing errors propagating through manufacturing process.
- Cut and laminated layers of carbon fiber to make sailboat masts using carbon fiber lamination techniques.

LIDAR Lab, Atlanta, Georgia Jan 2023- Dec 2023

Research Assistant

- Designed and prototyped sensor connectors and holders on a bipedal robot using Onshape CAD and 3D Printing.
- Fabricated PCBs with Reflow Soldering.

Projects

Automatic Card Shuffler | *Personal/Capstone Team Lead* January 2025 – Present

Designed Autonomous System for shuffling cards for TCGs | I²C, Electrical Schematic Analysis

- Programmed ToF, Ultrasonic, and RGB color sensors with brushed and brushless DC motors using C on STM32IDE.
- Prototyped using Solidworks CAD and Bambu Lab 3D-Printers.
- Debugged and tested circuit system with Multimeter and Serial Monitoring.

League of Legends Champion Predictor Machine Learning Project| *Team Lead* Aug 2024 – Dec 2024

Devised Algorithm using Logistic Regression, Random Forests, and LSTMs | PyTorch/TensorFlow, scikit-learn, Pandas, Keras

- Processed data taken from over 2000 games via Excel and Python using Data Cleaning and Feature Engineering.
- Logistic Regression and Random Forest models achieved 92.79% and 97% accuracy respectively

ME2110 Robotics Competition Top 16 Finish | *Team Member* Aug 2022 – Dec 2022

Created Autonomous Robot to compete in Competition for class under heavy material and sizing restrictions | GD&T

- Fabricated with 3D-printing, Laser cutting, and Woodworking with various power tools and machines.
- Familiarized with tools in the Product Development Lifecycle Including HOQ, BOM, Spec Sheet, Morph Chart

Activities

Automotive LIDAR | *ROS integration Team Member* August 2025 – Present

Developing a LIDAR system on an RC vehicle allowing Autonomous Navigation with Collision Avoidance | ROS, ROS2, Git, GitHub

- Migrating projects and code from ROS to ROS2 due to End of Life.

RoboJackets, RoboWrestling | *Electrical Sub-Team Member* Aug 2021 – May 2022

Building a competition robot to compete in the Robot-Sumo Competition | Autodesk Eagle, PCB design, Git, GitHub

- Updated PCB for radio board with new routing and component locations, fixing pin access and voltage issues

Hytech Racing | *Aero-Mechanical Sub-Team Member* Aug 2021 – Dec 2021

Georgia Tech's Formula SAE team | FEA

- Improved Swan-Neck Wing mount using Topology Studies with Solidworks FEA to reduce material required by 30%